

CLAIMS:

1. A catheter for medical applications, suitable for being inserted into a duct comprising a first vessel and a second vessel which branches off from said first vessel, the catheter comprising a catheter body which
5 extends from a proximal end to a distal end, said catheter body comprising a main cavity, bounded by a lateral wall, which passes through the catheter body between the proximal end and the distal end, suitable for
10 receiving a guide cable for the insertion of the catheter into the first vessel, and at least one opening, disposed on the lateral wall at the distal end and suitable for perfusing a substance, characterized in that
the catheter body, at a portion of the lateral wall
15 comprised between said at least one opening and said distal end, comprises
first and second occluding means, wherein the first occluding means are suitable for at least partially occluding a gap between the catheter body and an inner
20 wall of the first vessel, and the second occluding means can be associated internally with said main cavity and are suitable for at least partially occluding said main cavity,
said first and second occluding means defining a
25 preferred direction of outflow of a fluid from the main

cavity of the catheter body to the second vessel, through
said at least one opening of the catheter body;
wherein

all the openings pass through said lateral wall and are
5 in fluid communication with the main cavity
said at least one opening is such that the area of the at
least one opening is not less than the area of the cavity
of the distal end of the catheter body
said openings are not aligned with one another with
10 respect to a main axis of extension of the catheter body.

2. A catheter according to claim 1, wherein said
openings are disposed substantially in a helical
direction with respect to the main axis of extension of
the catheter body.

15 3. A catheter according to claim 1 or 2, wherein
said first and second occluding means co-operate with
each other to create a resistance to the passage of fluid
through said distal end, favouring an outflow of fluid
through said at least one opening.

20 4. A catheter according to claim 1, wherein said
first and second occluding means, at a portion of the
catheter body comprised between said at least one opening
and said distal end, substantially effect the occlusion
of the first vessel into which the catheter is inserted,
25 so as to direct a flow of fluid into the second vessel,

through said at least one opening.

5 5. A catheter according to claim 1, wherein said first occluding means comprise an inflatable element positioned round the catheter body, said inflatable element, in a rest state, adhering substantially to the catheter body, and in a working state being substantially in contact with an inner wall of said first vessel.

10 6. A catheter according to claim 5, wherein said inflatable element is in fluid connection with the proximal end so as to be operable from said proximal end.

15 7. A catheter according to claim 1, wherein said catheter body comprises a secondary cavity, which extends from the proximal end to the distal end and is hermetically separated from said main cavity, said secondary cavity being in fluid connection with said first occluding means so as to permit the actuation of said first occluding means.

20 8. A catheter according to claim 7, wherein said secondary cavity is produced in a thickness of said lateral wall of said catheter body.

25 9. A catheter according to claim 7 or 8, wherein the catheter body has an oval cross-section having a first pole more pronounced than a second pole diametrically opposed to the first pole, so that the lateral wall, at the first pole, receives said secondary

cavity.

10. A catheter according to claim 1, wherein said second occluding means comprise an occluding body, suitable for being introduced into said main cavity, and
5 an insertion cable firmly connected to said occluding body so as to allow the insertion of the occluding body through the main cavity.

11. A catheter according to claim 10, wherein said occluding body is substantially spherical in shape.

10 12. A catheter according to claim 10, wherein said occluding body is substantially frustoconical in shape.

13. A catheter according to claim 1, wherein said catheter body, at said distal end, comprises a portion with tapered profile so as to reduce the cavity of the
15 catheter body at the distal end.

14. A catheter according to claim 1, wherein said second occluding means, at said distal end, comprise a membrane suitable for at least partially occluding said main cavity and having a hole suitable for allowing the
20 passage of the guide cable of said catheter.

15. A catheter according to claim 14, wherein said membrane is firmly connected to the distal end of the catheter body.

16. A catheter according to claim 1, wherein said
25 second occluding means are made of a material suitable

for being sterilized.

17. A catheter according to claim 1, comprising, at said proximal end, a main pathway, suitable for receiving said second occluding means and fluidly connected to said
5 main cavity.

18. A catheter according to claim 17, wherein said main pathway comprises a threaded section capable of producing a threaded connection with a corresponding threaded portion of said second occluding means.

10 19. A catheter according to claim 1, wherein said proximal end comprises a secondary pathway, fluidly connected to said secondary cavity, and suitable for receiving at the inlet a fluid for allowing the actuation of said first occluding means.

15 20. A catheter according to claim 1, wherein said proximal end comprises an infusion pathway, fluidly connected to said main cavity and suitable for receiving at the inlet a fluid, so as to allow the flow of the fluid from the proximal end to the distal end.

20 21. A method for the use of a catheter according to claim 1, said catheter comprising first and second occluding means said method comprising the steps of:

- inserting the catheter into a first vessel, by means of a guide cable, so that the distal end of the catheter
25 passes beyond the branching from which starts the second

vessel into which it is intended to perfuse a substance;

- withdrawing the guide cable and inserting the second occluding means;
- actuating the first occluding means so as to occlude
5 at least partially the gap between the catheter body and the inner wall of the first vessel;
- injecting the substance into the main cavity of the catheter so as to direct the substance from the at least one opening of the lateral wall of the catheter body to
10 the bifurcation from which the second vessel starts.

22. The method of claim 21, wherein the first vessel is a subclavian artery and the second vessel is a mammary artery.